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PATENT
3003-1153

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AUG 16 2007

In re application of

Jeremy MARSHALL et al.

Conf. 8915

Application No. 10/506,472

Group 3767

Filed April 6, 2005

Examiner A. Gilbert

MULTI-SPRING SUPPORT FOR NEEDLE SYRINGES

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Assistant Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

August 16, 2007

Sir:

The present invention is a syringe by which a needle is first inserted in a patient, and then a liquid is injected into the patient through the needle.

It operates in two stages: in Figure 1, you see the cocked device before release. Upon release, the first spring 4 drives everything within the barrel 1 downward, together as a unit. The needle 3 thus penetrates the patient.

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Linda Sayyad
Linda Sayyad

But first spring 4 is stronger than second spring 5, so when 12 strikes 13, the syringe 2 stops but the plunger 8 keeps going, which injects the liquid into the patient through the extended needle. It keeps going, because first spring 4 is stronger than second spring 5, and so spring 4 compresses spring 5 as the plunger moves deeper into syringe 2 to inject the liquid.

Thus there is a two-stage action: first everything within barrel 1 moves down in unison, which does nothing more than insert the needle into the patient without dispensing any liquid. Then, in the second stage, the plunger keeps going within the syringe 2, because strong first spring 4 overcomes weaker second spring 5, syringe 2 remaining stationary because 12 rests against 13.

The Examiner's Advisory Action suggests that third spring 11, the weakest one, be recited in claim 1. But all that spring 11 does, is to keep the parts in the initial position shown in Figure 1.

Against this background, it will be seen that the rejections cannot stand.

The rejection under 35 USC §112 may be based on a misunderstanding as to which is the first spring and which is the second spring. The first spring is 4, the second spring is 5. As the plunger moves forward, second spring 5 is compressed. The force of spring 5 against collar 9 clearly holds the syringe

seated in its forward position, as recited at the end of claim 1. We see no ambiguity nor need for amendment as to form.

Similarly, the rejection on BERGENS et al. U.S. 6,270,479 cannot stand.

In BERGENS et al. the Examiner relies on Figures 1A-1D, which show a form of mechanism for coupling and uncoupling a drive plunger or "injection head" 142 from the syringe plunger 126. The relevant elements of the device are a drive spring 140 which, upon release of a trigger drive a drive plunger with a wine glass-shaped head forward. The drive plunger transmits motion to a syringe 120 via a penetration head assembly 150. The main features seem to be a forward drive surface 152 which transmits forward movement to the syringe 120, and a further component at the rear end of the assembly which is biased rearwardly by a spring 156.

In operation, on release of the drive spring 140, the plunger moves forwardly and the penetration head assembly moves forward as one to contact the syringe wall and to move the syringe forwardly to expose it and to penetrate the flesh. However, once the syringe reaches its forward limit position, the main spring 141 overcomes the bias spring 156 so that the two main parts of the penetration head assembly contract, thereby exposing a ramp portion which cams the arms of the wine glass-shaped assembly together so that the plunger can slide forward to contact the syringe plunger and then expel the dose. Continued forward movement of the shaped plunger moves it to a position

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where the arms can spring out again, thus allowing the syringe to be withdrawn into the housing.

The main distinction is that, in the arrangement of the present invention, both springs 4 and 5 act on the syringe plunger whereas in the arrangement of U.S. '479 the spring 156, which the Examiner equates to our second spring, never acts on the syringe plunger. In other words, a distinctive feature of the inventive arrangement is that, when the plunger 8 is in contact with the piston 14, the plunger 8 is acted on in opposite senses by the first spring 4 and the second spring 5. In U.S. '479 the so-called second spring 156 does act on the drive plunger 142 at the same time as the drive spring 141, but before the drive plunger contacts with the syringe plunger 126, the spring 156, ceases acting on either plunger.

Allowance is accordingly respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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